Responses to USEPA Region 1 Questions regarding the NEWS-VT Facility Updated 11/20/2018
Vermont Department of Environmental Conservation

Question 1: when does Vermont expect to issue the Solid Waste Management Facility Permit? If we understand correctly, once the Solid Waste Management Facility Permit has been granted, the Act 250 process will resume.

Response 1: Vermont DEC issued the final Solid Waste Facility Certification on October 12, 2018. Documents pertaining to this certification may be found at: https://anrweb.vt.gov/DEC/ERT/SolidWaste.aspx?SWFacID=OL510.

Question 2: Can we please get clarification of the permitting and Act 250 process and a timeline?

Response 2: On June 13th, the Act 250 District Commission , recessed the proceeding regarding the expansion of NEWS-VT pending information to be filed by the facility operator, on or before November 30, 2018. In their recess order, the Act 250 Commission provided that parties would have 15 days from the date of receipt of the required information to provide information in response.

On October 19th, the Act 250 District Commission filed a Memorandum of Decision stating that:

> The District #7 Environmental Commission (Commission) received and is reviewing the Solid Waste Management Faciltiy (sic) Certification dated October 12, 2019, and may reconvene the hearing. Pursuant to Rule 19(C), the Commission hereby notifies parties of their right to request a reconvenend (sic) hearing, to rebut the presumption. Any such request shall be filed on or before October 29, 2018. IF the hearing is reconvened, the persons and entities which requested untimely party status (…) will be allowed limited rights to participate as Friends of the Commission, after all admitted parties have had an opportunity to present evidence and cross-examine, to the extent that time is reasonably available, so as to not cause unfair delay. Reference is also made to Rule 19(F) concerning the effect of presumptions.

The effect of the October 19th Decision is as follows: 1) The new October 29th deadline allows parties the opportunity to request a hearing for the express purpose of rebutting the presumption of compliance afforded to the Solid Waste Facility Certification; 2) The previous November 30th deadline has been superseded; and, 3) the District Commission is considering whether to reconvene the hearing of its own motion. This means that even if no parties come forward by October 29th to request a hearing, the Commission may still decide that a hearing is needed. The District's October 19th Decision is silent on the Memphremagog Regional Commission's requests for the Commission to address concerns regarding the treatment and discharge of leachate.

On October 29th, the Memphremagog Regional Commission (MRC) filed a request for a hearing before the Act 250 District Commission. The MRC filed further information on November 16th. The Act 250 District Commission is expected to issue a memo on party status and notice of reconvened hearing on November 20th or shortly thereafter.

All information regarding this proceeding can be viewed on the Vermont Act 250 Database, at https://anrweb.vt.gov/ANR/vtANR/Act250SearchResults.aspx?Num=7R0841-13.

Question 3: We understand that two additional permits will be required for landfill leachate. The first is a Pre-treatment permit issued to New England Waste Services Vermont (NEWSVT) by the Vermont Department of Environmental Conservation, which will require testing of leachate before treatment at

WWTFs. Is there an expected timeframe for this updated permit to be complete? Can we find out more about testing that will be required under this permit?

Response 3: Vermont is taking a closer look at leachate across the State, particularly with respect to PFAS. PFAS concentrations within landfill leachate can fluctuate depending on factors such as the waste composition, waste age and weather. Similarly, WWTF effluent PFAS concentrations can vary due to fluctuations in the sources of PFAS within the influent. To better establish the potential range in PFAS concentrations within the landfill leachate, the DEC is requiring the landfill operators to conduct PFAS sampling and testing on a semi-annual basis. In addition, further evaluation is needed to better understand the fate and transport of PFAS from landfill leachate as it is processed through WWTFs. The DEC will also begin more rigorous sampling of WWTF influent, effluent and surface water sampling which will be conducted during times when WWTFs are processing landfill leachate. This preliminary testing will occur in 2019 and this data will be used to help inform the renewal of the pre-treatment permit including any additional requirements. Attachment A of the Responsiveness Survey for the Solid Waste Facility Certification details these and other actions to be taken regarding leachate management from landfills, and provides a compilation of information collected to date.

Question 4: The second is a WWTF Discharge permit, issued to the City of Newport by Vermont Department of Environmental Conservation. The current permit is over ten years old and issuance of the new permit was pending while awaiting results of studies. Expect to have this permit out next year (2019). Can you please confirm whether this is the earlier permit, issued in 2004: https://anrweb.vt.gov/PubDocs/DEC/WSMD/Wastewater/permits/3-1241/3-1241_factsheet.pdf?

Response 4: This is the current permit for Newport City.

Question 5: Can you please provide more information on the studies, referred to above, required before issuance of the new permit?

Response 5: The DEC has required the City of Newport test their effluent for arsenic and to complete four Whole Effluent Toxicity (WET) tests to inform the Reasonable Potential Analysis required for renewal of the permit. A Reasonable Potential Analysis is required at renewal of wastewater discharged permits issued under the National Point Source Discharge Elimination System to ensure that any pollutants discharged by the facility will not cause or contribute to an exceedance of the Vermont Water Quality Standards.

Question 6: Can you please confirm that we understand the following correctly, that testing on effluent, including toxicity, from the landfill is currently taking place.

Response 6: The landfill operators have been the testing organic and inorganic contaminants including metals under their prior Certification. The new October 12, 2018 Certification also requires semi-annual testing for PFAS. Newport City WWTF is currently completing the testing required under their current permit and completed arsenic and WET testing.

Question 7: And, that the results of this testing will determine the testing and monitoring requirements for the new permit to be issued in 2019.

Response 7: Results of the testing at the landfill and the Newport City WWTF will help inform the requirements of the renewed permits for both facilities.

Question 8: Is this testing what was being referred to, above?

Response 8: Yes. In addition the DEC has conducted preliminary testing of PFAS in WWTF Influent and Effluent. The full report of this work is available here.

Question 9: How do these two permits, pre-treatment and discharge, fit into the overall process for the landfill expansion? Can the expansion proceed before new permits are issued?

Response 9: These two permits are separate from the landfill expansion and are not required for the expansion permit issuance.

Question 10: During the call it was noted that VT has been quite aggressive in setting standards for PFAS. In 2016, Vermont updated its health advisory for drinking water to 20 parts per trillion. How does the 20 PPT compare across the U.S. and to EPA national standards?

Response 10: EPA's Health Advisory is set at 70 parts per trillion (PPT) for the combination of PFOA and PFOS, which is not a regulatory standard. Some States have adopted this Standard. The State of Connecticut has adopted a Drinking Water Action Level of 70 PPT for five PFAS compounds. Vermont has adopted a groundwater enforcement standard of 20 PPT for the sum of five PFAS compounds (PFOA, PFOS, PFHxS, PFHpA, PFNA) in the Groundwater Protection Rule and Strategy (Chapter 12 of Vermont's Environmental Protection Rules).

Question 11: Does this standard apply to all classes of Vermont waters, like the Class B Lake Memphremagog?

Response 11: No. The Groundwater Protection Rule and Strategy does not apply to surface waters. There is no standard or criteria for PFAS in in the Vermont Water Quality Standards, which pertain to surface waters.

Question 12: Does it apply within the water body itself or "at the tap" once water has been treated?

Response 12: The Vermont Water Quality Standards presently require that Class B(2) surface waters "be managed to achieve and maintain a level of quality that is suitable for use as a public water source with filtration and disinfection or other required treatment."

Utilizing PFAS concentrations measured at the Newport WWTF, and a steady-state receiving water model (see EPA's "Technical Support Document for Water Quality-Based Toxics Control"), the DEC has calculated likely receiving water concentrations of PFAS downstream of the Newport WWTF within the Clyde River. These calculations show that the PFAS concentration within the Clyde River would be far lower than the Groundwater Enforcement Standard.

Question 13: We understand VT is considering requirements for PFAS testing in new permits for landfill. Which permits may require PFAS testing? We understand, from news reports, that issuance of permits has been delayed until PFAS testing done. Could you share more information about PFAS testing that was done (e.g., was PFAS testing done on groundwater, lakewater, or both? Is it the Solid Waste Management Facility Permit that was delayed for this testing, or other permits as well?).

Response 13: Please see responses and resources linked above for testing of leachate, influent, and effluent. Lakewater has not been tested for PFAS to date. For groundwater, in considering the final decision of the pending application for the Solid Waste Management Facility Certification, the DEC did request that PFAS testing be completed in six groundwater monitoring wells located around the landfill property. This initial testing occurred in August 2018. The results for the five PFAS compounds that have groundwater enforcement standards and Health Advisories in Vermont are as follows:

Table 1. Testing results for five PFAS sampling results (in parts per trillion) that are part of the Vermont Groundwater Enforcement Standard, for six groundwater monitoring wells in the vicinity of the NEWS-VT Facility.

Well location	PFOA	PFOS	PFHpA	PFHxS	PFNA	Total
MW-705	nd <1.8	nd <1.8	nd <1.8	nd <1.8	nd <1.8	ND
BRW-3D	nd <1.8	nd <1.8	nd <1.8	nd <1.8	nd <1.8	ND
MW-P2RR	57	nd <8.9	41	18	nd <8.9	116
MW-P6	nd <1.7	nd <1.7	nd <1.7	nd <1.7	nd <1.7	ND
MW-E1	nd <1.8	nd <1.8	6.7	nd <1.8	nd <1.8	6.7
MW-E2	nd <1.8	nd <1.8	nd <1.8	nd <1.8	nd <1.8	ND

Three PFAS compounds above the Groundwater Enforcement Standard of 20 PPT were noted in MW-P2RR. This monitoring well is positioned immediately adjacent to the closed unlined landfill, on the landfill property, and over 800 feet from the property boundary which serves as the compliance point for the unlined landfill.

Due to this detection of PFAS above standard in the vicinity of the unlined landfill, and the low-level detection in MW-E1, downgradient of the lined portion of the landfill, the Solid Waste Management Facility Certification issued October 12th has been amended to include a condition requiring PFAS sampling to be incorporated into the regular semi-annual groundwater monitoring program. The certification also requires semi-annual monitoring for PFAS within the landfill leachate and within the landfill underdrain discharge locations.

Question 14: could we please have more information about the lake water monitoring being done by VT on Memphremagog (e.g., frequency, parameters, etc.)? Are there any plans to update/change these requirements based on the results of current studies being done re: the landfill?

Response 14: The Vermont DEC coordinates a comprehensive monitoring program for Lake Memphremagog aimed at phosphorus and other nutrient management. A summary of those efforts is provided in Appendix A of this document. DEC does not have immediate plans to update its lake monitoring program based on results of landfill monitoring; however, DEC practices adaptive management and updates its plans regularly, as needed.

Question 15: We understand that Vermont is compiling all requests and comments that were received by the October 29 deadline to file requests for re-hearings. Do you have a sense of when the District Environmental Commission might rule on whether to reconvene the hearing? If the hearing is not reconvened, we understand from the Hearing Recess Order that the Commission will set a date for adjournment and issue a final decision based on the existing record; are you able to let us know how long that process might take?

Response 15: The decision to reconvene the hearing rests with the District 7 Commission and will depend on how the Commission decides to address several pending hearing requests and requests for party status. On October 29th, MRC de Memphremagog and the City of Sherbrooke filed a request for a hearing under Criteria 1 (undue water pollution), 1B (waste disposal), 3 (burden on existing water supply), 7 (municipal & government services) and 9K (public investment). On November 2nd, the Applicant filed a Memo in Opposition. The Applicant objects to broadening the scope of the hearing and argues that the scope of any future hearing should be solely limited to Criterion 1B and rebuttal of the Solid Waste Certification under 1B. The Applicant also objects to party status requests filed by the citizens' group, Don't Undermine Memphremagog's Purity (DUMP) and other individuals. Given the flurry of recent filings, it would appear likely that a hearing will be scheduled at some point, however the scope of the hearing remains in question. The Act 250 District Coordinator for the District 7 Commission, housed in St. Johnsbury, would be in the best position to forecast when the Commission may elect to schedule a hearing. Full contact information for District 7 staff and Commissioners may be found at https://nrb.vermont.gov/act250-program/district-staff-and-commissions.

Question 16: Is the Act 250 process the final step in the approval process before expansion can proceed? Are there any other requirements that must be met?

Response 16: In addition to the requirements set forth by the Solid Waste Facility Certification, and adherence to requirements for other Agency permits, should an amended Act 250 Land Use Permit authorize the expansion, that Permit will very likely contain additional requirements and conditions. It is unknown at this time what conditions the Commission may elect to impose. However, at this point our Department understands that the Act 250 amended Land Use permit is the final permit necessary to authorize the expansion.

Question 17: We note that on October 26th, the City of Newport filed a letter with VT DEC indicating that it had voted to immediately stop taking leachate from the landfill and to formally oppose its expansion. Are you able to confirm that the landfill is no longer sending leachate for treatment at Newport WWTF? If this is the case, we assume all leachate is now being directed to the other four facilities outlined in the pre-treatment permit. Can you please confirm?

Response 17: At the present time, DEC understands that the City of Newport is not accepting leachate from the landfill. However, DEC also understands that the landfill operator is permitted to truck leachate to Plattsburgh WWTF and to the Concord, N.H. WWTF, if needed. The landfill is required by the State of VT to report the quantities of leachate delivered to all VT facilities subject to the NPDES pre-treatment permit. Thus, it cannot be unequivocally assumed that leachate is being treated only by the Vermont facilities.

Question 18: The Responsiveness Survey from the DEC indicates that "there are water quality conditions besides the treatment of leachate at a wastewater treatment facility that currently prevent Lake Memphremagog from being classified as a Class A (2) water". Can you provide more information about the water quality conditions that prevent the lake from being classified as Class A (2)? We are curious about the process used to determine the classification of lakes, as well as what the process would be for reclassification of a lake.

Response 18: It is the statutory requirements for surface waters designated as Class A(2) for public water source, coupled with existing land use conditions, that render reclassification infeasible. Vermont State Statute at Title 10 V.S.A. §1253 documents the reclassification process for surface waters in

Vermont. Chapter 29a of the Environmental Protection Rules, or the Water Quality Standards, is the rule containing waterbody classifications.

Title 10 V.S.A. 1259 (C) indicates that no direct discharges of waste that at any time contained pathogens of human origin may be allowed in waters designated Class A. Class A incorporates Class A(1), or designated ecological waters, and Class A(2), or designated public surface water sources. There are four wastewater treatment facilities that provide pollution control services in the United States portion of the watershed, and at least one in the Canada portion of the watershed. Reclassification of Lake Memphremagog to Class A(2) for the designated use of Public Water Source would render these duly authorized pollution control facility discharges in violation of Vermont State law.

In addition, Chapter One of the Vermont Environmental Protection Rules, or the Vermont Wastewater System and Potable Water Supply Rules, preclude the establishment of any in-ground wastewater treatment system in excess of 1,000 gallons per day in the watershed of a surface water designated as Class A(2) for public water source. There are likely hundreds or even thousands of such permitted septic systems in the U.S. portion of the Lake Memphremagog watershed. Reclassification of the Lake to Class A(2) for the designated use of Public Water Source would render these systems in violation of Chapter Two and also preclude the construction of any additional septic systems in excess of 1,000 gallons per day, per parcel.

Title 10 V.S.A. §1253 documents the reclassification process for surface waters in Vermont. Chapter 29a of the Environmental Protection Rules, or the Water Quality Standards, is the rule containing waterbody classifications.

Appendix A.
Lake Memphremagog Water Quality Monitoring Summary
Watershed Management Division
Department of Environmental Conservation
Vermont Agency of Natural Resources

Oct 24, 2018

The Vermont Department of Environmental Conservation's Watershed Management Division coordinates a comprehensive monitoring effort for conventional water quality parameters in the lake waters and tributaries of Lake Memphremagog. In-lake efforts to track nutrients and cyanobacteria are described first. This is followed by a description of tributary testing, and finally, water quality summaries using the Vermont Lakes Scorecard are described.

- Routine In-Lake Monitoring

Principal Location:
Station #1 (same as Lay Monitoring Program) in center of lake off Whipple Point, Newport Town, VT (44.9628, -72.2228). See https://anrweb.vt.gov/DEC/IWIS/ReportViewer.aspx?Report=MonitoringSiteSummary&ViewParms=False&LocationID=504805

Supplemental Locations:
- Lake Memphremagog Station #2 (historical only)
- Lake Memphremagog Station #3 (44.9665,-72.2256)
- Lake Memphremagog Station #4 (44.9818,-72.2168)
- South Bay Station #1 (44.9203,-72.2097)

Frequency:
Monthly from May to October (6 sampling events) and once in late winter when iced over.

Water Sampling Method and Parameters:
- Secchi Depth
  - Water Transparency/Turbidity
- Surface Bottle Grab (depth = 0.5 m)
  - Total Phosphorus
  - Dissolved Phosphorus
  - Total Nitrogen
  - Chloride
  - Dissolved Organic Carbon
  - Earth Metals – Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium
  - Phytoplankton (if visible)
- Bottom Water Sample (depth = 1 m above bottom ≈ 8 m)
  - Total Phosphorus
  - Dissolved Phosphorus
  - Total Nitrogen
  - Chloride
  - Dissolved Organic Carbon

- Earth Metals – Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium

- Multi-Probe Vertical Profile (depth = 0.5 m and every 1 m to 1 m above bottom ≈ 8 m)
  - Chlorophyll-a
  - Conductivity
  - Dissolved Oxygen
  - pH
  - Temperature

- Lake Memphremagog Cyanobacteria Monitoring Program

Citizen volunteers recruited by the Memphremagog Watershed Association participate annually in the Vermont cyanobacteria monitoring program coordinated by VT DEC and the VT Department of Health (VDH). They have been active in this program since 2013. Volunteers are recruited and trained each year to utilize Vermont' visual assessment protocol to evaluate cyanobacteria conditions on surface waters. Reports documenting observed conditions are provided weekly from mid-June through late September via an online portal hosted by the VDH. Additional mid-week reports from volunteers and other observers are also collected each summer during bloom events. All reports are reviewed and approved before posting to the CyanoTracker online map hosted on the VDH website. Though the number of sites fluctuates annually with volunteer participation, sites for which data are available include:

- Lake Memphremagog Spring Phosphorus Monitoring Program

The Watershed Management Division's (WSMD) Spring Phosphorus Program Coordinator conducts water quality monitoring annually soon after ice out at Lake Memphremagog Stations 1, 3 , 4 as well as South Bay Station #1 for a variety of water quality parameters including total phosphorus, total nitrogen, alkalinity, calcium, chloride, magnesium, hardness, Secchi disk transparency, color, temperature, dissolved oxygen, pH, conductivity, chlorophyll-a and turbidity. As a component of a focused water quality monitoring effort, WSMD's Lake Assessment and Lay Monitoring Program Coordinator started collecting similar multi-probe parameters (temperature, dissolved oxygen, pH, conductivity, chlorophyll-a) and discrete (surface grab and 1 meter above bottom Kemmerer) water samples (TP/DP, TN, Earth metals, chloride, DOC) during the summer of 2018 visits on a monthly basis from May to September. This focused monitoring is slated to continue indefinitely going forward.

Lake Memphremagog Cyanobacteria Monitoring Locations

- Prouty Beach (#204)
- Derby Bay (#211)
- Holbrook Bay (#212)
- Newport City docks (#342)

Annual summaries can be found in the statewide reports located on the VT DEC's cyanobacteria webpage (near the bottom of the page). The project's quality assurance plan can also be found on this page.

- Lake Memphremagog Tributary Monitoring Summary

A targeted tributary monitoring program that has been supported through the LaRosa volunteer monitoring program since 2005 has included sampling at over 153 sites in the lake Memphremagog watershed with an additional 13 sites in the Stearns Brook watershed. This water sampling program has been supported through collaboration of NorthWoods Stewardship Center, the Memphremagog

Watershed Association, Seymour Lake Association, and the Orleans County Natural Resources Conservation District with Fritz Gerhardt of Beck Pond LLC leading the program.
This sampling program has included sampling eight times a year for nitrogen, phosphorus and turbidity with at least two dates targeting runoff events and has focused on identifying source areas through sampling small tributaries and ditches or bracketing source areas. Through these efforts, several pollution source areas have been identified as shown in Figure 2 and many of these have been addressed in collaboration with agricultural partners and landowners while others are the focus for ongoing implementation efforts. This water quality monitoring program has demonstrated several cases where implementation of best management practices resulted in reductions in phosphorous concentrations including the "Strawberry Acres" tributary where water quality sampling suggests a greater than 50% reduction in phosphorus loading after a barnyard overhaul and pasture improvement practices completed in this watershed. The Seymour Lake Association also completed sampling of six tributaries to the lake in 2008 and 2009 and will be resampling these tributaries in 2017 to evaluate if these levels have remained consistent.
The WSMD maintains an ongoing tributary monitoring program targeting monthly sampling for the four major tributaries (Barton, Black, Clyde, and Johns River) with an additional 8-12 high flow event samples per year. Effluent sampling and flow measurements will monitor wastewater treatment plan phosphorus loads to verify compliance with phosphorus wasteload allocations for each facility in order to meet the target load allocations for the Lake Memphremagog Phosphorus TMDL.
A collaborative water sampling program supported by VTDEC through the LaRosa volunteer monitoring program and Clean Water Initiative funding is also integral to the Lake Memphremagog TMDL as it will continue to pinpoint phosphorus source areas and evaluate load reductions achieved through the implementation of BMPs (See Figure 1, below). This targeted water sampling program is also being incorporated into the RCPP program to target agricultural BMP's where they can have the greatest impact. Sampling will be done in collaboration with farmers and resource staff to aid in the development of nutrient management plans and land treatment plans that truly address the primary phosphorus sources on the farm. The sampling will then continue as BMP's are installed to evaluate load reductions or if loading calculations are not possible at least changes in phosphorus concentrations before and after BMP implementation. A local BMP scenario tool will continue to be used to compare predicted vs measured load reductions achieved at a smaller scale and the scenario tool will be refined if monitoring results show significant differences in load reductions in a number of locations. Such efforts also be used to "fine tune" basin-wide BMP scenario tool presented in in the TMDL for future Tactical Basin plans.

- The Vermont Lakes Scorecard

The Vermont Inland Lake Score Card is a user-friendly interface developed by the Vermont Lakes and Ponds Management and Protection Program (VLPP) to share available data on overall lake health with lake users. The Lake Score Card for Memphremagog and South Bay are good references for past and current monitoring data with program descriptions in the link to How Lakes Are Scored. The Lay Monitoring Program coordinates with Newport City staff at the City Dock to sample at Lake Memphremagog Station #1 (see Figure 2 for monitoring locations below) for total phosphorus (nutrient) concentration, chlorophyll-a (algae and cyanobacteria) concentration, and/or Secchi depth (water transparency) every week to ten days from Memorial Day to Labor Day (see Vermont Lay Monitoring Program (LMP) Sampling Protocol). See https://dec.vermont.gov/watershed/lakes-ponds/data-maps/scorecard

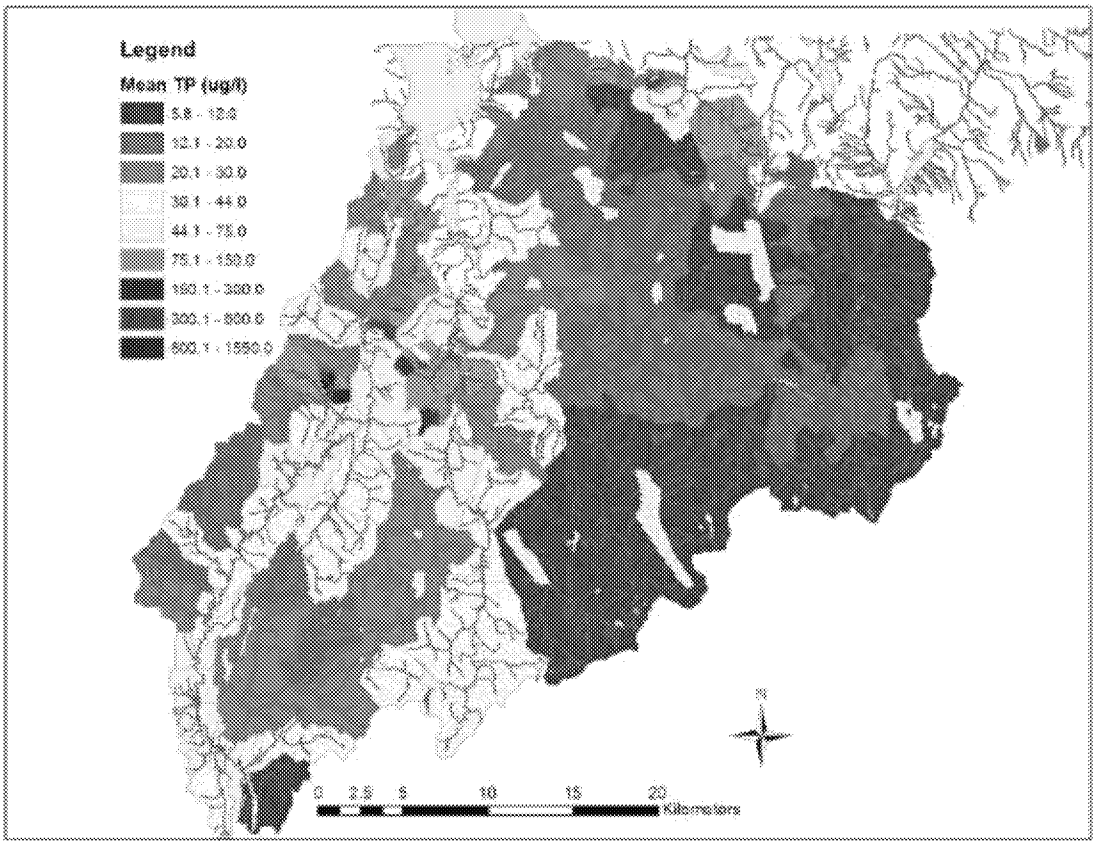

Figure 1. Mean total phosphorus concentrations measured from 146 sub-watersheds of the Lake Memphremagog Basin during 2005-2016. Watersheds with mean phosphorus concentrations of greater than 44 ug/l are targeted for phosphorus reduction efforts in the lake Memphremagog watershed.

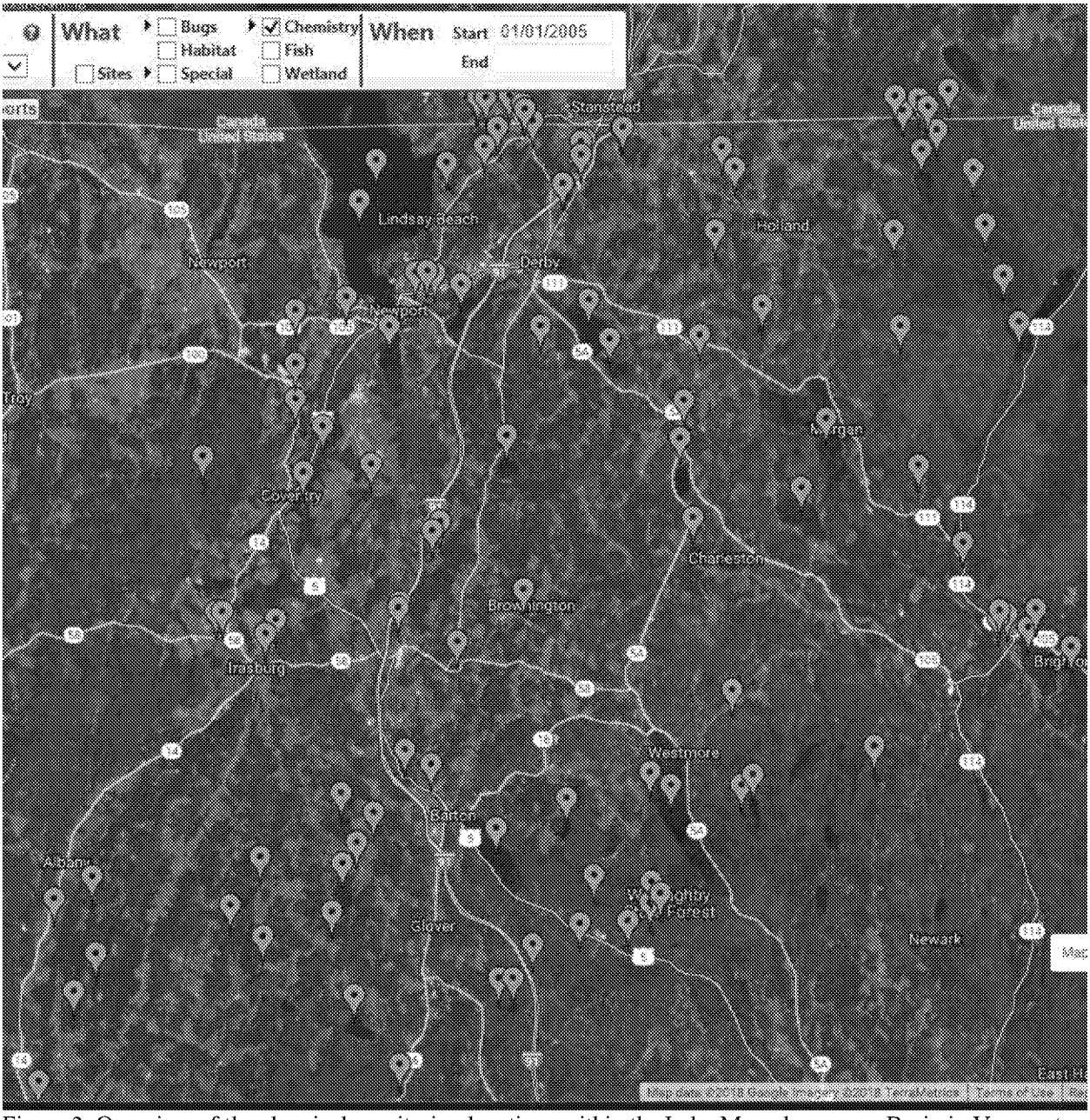

Figure 2. Overview of the chemical monitoring locations within the Lake Memphremagog Basin in Vermont.